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What is claimed is:

- 1 1. A supercapacitor structure comprising in contiguity a  
2 positive electrode member, a negative electrode member, and a  
3 separator member interposed therebetween  
4 characterized in that  
5 a) each of said electrode members comprises an activated  
6 carbon fabric element to which is bonded an electrically-  
7 conductive current collector element,  
8 b) said separator member comprises a micro-fibrillar ultra-  
9 high molecular weight polyolefin membrane, and  
10 c) each said member is bonded to one or more contiguous  
11 members at its respective interface to form a unitary flexible  
12 laminate structure.
- 1 2. A supercapacitor structure according to claim 1 wherein  
2 said polyolefin membrane comprises polyethylene.
- 1 3. A supercapacitor structure according to claim 1 wherein at  
2 least one of said collector elements comprises an open-mesh  
3 grid.
- 1 4. A supercapacitor structure according to claim 3 wherein  
2 said collector element grids are thermally bonded to associated  
3 carbon fabric by an electrically-conductive thermoadhesive  
4 composition.

1 5. A supercapacitor structure according to claim 4 wherein  
2 said carbon fabric electrode elements are thermally bonded to  
3 the interposed separator member by virtue of the thermoadhesive  
4 nature of said polyolefin membrane.

1 6. A method of making a supercapacitor structure which  
2 comprises arranging contiguously a positive electrode member, a  
3 negative electrode member, and a separator member interposed  
4 therebetween

5 c h a r a c t e r i z e d i n t h a t

6 a) each of said electrode members is formed of an activated  
7 carbon fabric element bonded to an electrically-conductive  
8 current collector element,

9 b) said separator member is formed of a micro-fibrillar  
10 ultra-high molecular weight polyolefin membrane, and

11 c) each said member is bonded to one or more contiguous  
12 members at its respect interface to form a unitary flexible  
13 laminate structure.

1 7. A method according to claim 6 wherein

2 a) at least one surface of each said collector element is  
3 coated with a layer of electrically-conductive thermoadhesive  
4 composition,

5 b) each fabric electrode element is arranged in surface  
6 contact with the coated surface of its associated collector  
7 element to form a subassembly, and

8 c) said subassembly is laminated under heat and pressure to  
9 form a unitary electrode member.

1 8. A method according to claim 7 wherein

2 a) the exposed fabric surface of each said electrode member  
3 is arranged in contact with a respective surface of said  
4 separator member, and

5 b) said arrangement is laminated under heated and pressure  
6 to soften at least said separator member surfaces and effect an  
7 adhesive laminate bond between said members.

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